

CLAIMS

1. A liquid intumescent coating composition comprising a resin system comprising at least one polymeric component, at least one ethylenically unsaturated monomeric component and at least one intumescent ingredient, the 5 coating composition being curable to a solid state by free radical polymerisation.
2. A liquid intumescent coating composition as claimed in claim 1, wherein the said at least one polymeric component comprises solid thermoplastic resin.
3. A liquid intumescent coating composition as claimed in claim 1 or claim 2, wherein the at least one polymeric component comprises at least one 10 homopolymer, copolymer and/or terpolymer of a methacrylic resin.
4. A liquid intumescent coating composition as claimed in any preceding claim, wherein the at least one polymeric component comprises a meth(acrylate) copolymer.
5. A liquid intumescent coating composition as claimed in any preceding 15 claim, wherein the at least one polymeric component comprises the reaction product of at least one of styrene vinyl toluene together with at least one of any of the following:- methyl methacrylate, ethyl methacrylate, n-butyl methacrylate, isobutyl methacrylate t-butyl methacrylate, 2-hydroxy ethyl methacrylate, 2-hydroxy propyl methacrylate, 2-ethylhexyl acrylate, methyl acrylate, ethyl acrylate, n-butyl acrylate, isobutyl acrylate, t-butyl acrylate, 2-hydroxy ethyl acrylate, 2-hydroxy propyl acrylate and 2-ethylhexyl acrylate. 20
6. A liquid intumescent coating composition as claimed in any preceding claim, wherein the at least one polymeric component comprises the reaction product of one or more diene together with at least one any of the following:-

styrene, vinyl toluene, vinyl chloride, vinyl acetate, vinylidene chloride and vinyl versatate esters.

7. A liquid intumescent coating composition as claimed in any preceding claim, wherein the ethylenically unsaturated monomeric component has at least 5 one of a methacrylate or acrylate functionality.

8. A liquid intumescent coating composition as claimed in any preceding claim, wherein the ethylenically unsaturated monomeric component comprises any of the following either alone or in combination:- methyl methacrylate, ethyl methacrylate, n-butyl methacrylate, isobutyl methacrylate t-butyl methacrylate, 2-10 ethylhexyl methacrylate, methyl acrylate, ethyl acrylate, n-butyl acrylate, isobutyl acrylate t-butyl acrylate and 2-ethylhexyl acrylate.

9. A liquid intumescent coating composition as claimed in any preceding claim, wherein the resin system constitutes from 20% to 60% of the coating composition.

15 10. A liquid intumescent coating composition as claimed in any preceding claim, wherein said at least one polymeric component constitutes from 10% to 50% by weight of the resin system.

11. A liquid intumescent coating composition as claimed in any preceding claim, wherein said at least one ethylenically unsaturated monomeric component 20 constitutes from 30% to 90% by weight of the resin system.

12. A liquid intumescent coating composition as claimed in any preceding claim, wherein said at least one intumescent ingredient comprises an acid source, a carbon source and a gas source.

13. A method of curing a liquid intumescent coating composition to a solid state by free radical polymerisation comprising the step of adding an initiator to the liquid intumescent coating composition, wherein the coating composition comprises at least one polymeric component, at least one ethylenically unsaturated monomeric component and at least one intumescent ingredient.
- 5 14. A method as claimed in claim 13, wherein the coating is curable on initiation by organic peroxide.
15. A method as claimed in claim 14, wherein the organic peroxide comprises any of the following either alone or in combination:- diacyl peroxides, ketone peroxides, peroxyesters, dialkyl peroxides, hydroperoxides and peroxyketals.
- 10 16. A method as claimed in any of claims 13 to 15, wherein the coating composition is cured in less than 60 minutes at a temperature of 20°C +/- 3°C.
17. A method as claimed in any of claims 13 to 16, wherein less than 5% by weight of volatile components is lost by evaporation during the conversion of the
- 15 composition to a solid state by the addition of an organic peroxide.